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Attachment of the cover 66 to the wire 70 can also be accomplished by various means. The preferred technique is to fabricate the cover in two pieces: a base piece, and a top piece which cooperate to define the bore through which the wire passes. These pieces are then ultrasonically welded around the wire.

In this embodiment, the cover 66 has a thickness of 3.8 mm, and the wire has a thickness of 1.5 mm. At the top edge of the cover, where the top and bottom pieces are welded to contain the wire, there is a ridge having a thickness of 4.5 mm. The housing of the computer has a thickness of 26 mm. The distance between the two pivot axes (i.e. the center-to-center radial distance between the rings 64 and the wire 70) is great enough to provide a 0.5 mm spacing between the top of the cover and the housing when the cover is in its closed position. This gap assures the cover won't bind regardless of manufacturing tolerances.

The illustrated housing and cover are made of polycarbonate/ABS plastic, with the rings 64 and the associated cradles 68 being made of a self-lubricating material, such as teflon- or silicone-impregnated plastic.

It is possible to effect a detent in the pivotal mounting of the cover 66 on the wire 70 by slightly bending or kinking the wire, and providing a small slot or indentation 73 in the side of the bore within the cover in which this bend or kink can fit, as shown in FIGS. 8A and 8B. When the cover is rotated about the wire to a predetermined position, the bent/kinked wire—which is normally confined to the linear bore—can expand into the slot or indentation, resisting further rotation absent increased torque.

It is possible to effect a detent in the pivotal mounting of the wire to the housing by the same arrangement depicted in FIG. 7, viz. to use a spring detent radially directed against the rings 64. Alternatively, an axially directed detent, such as against the sides of the shoulders 66, can also be used. If desired, both of the pivots that comprise the double-pivot hinge can have their own detent mechanism.

FIGS. 9–13 show a write-on computer 74 using a flip-around double-pivot hinge 76. In this arrangement, a cover 78 is connected to an intermediate member 80 by a first pivot 82. The intermediate member, in turn, is pivotally to the computer housing 84 by a second pivot 86.

The first pivot 82 includes a socket in the cover which cooperates with a finger 90 extending from the intermediate member to provide pivotal motion of the cover around the edge of the intermediate member.

The second pivot 86 includes a slot 92 in a boss 94 portion of the housing 84, which cooperates with a finger 96 extending from the intermediate member 80. As best shown in FIG. 11, slot 92 permits the axis of the second pivot 86 to be slid back and forth along the top face 98 of the computer. This arrangement permits linear motion, as well as pivotal motion, of the intermediate member relative to the top face of the computer.

Intermediate member 80 further includes a sliding latch 100 comprised of a slidably mounted thumb grip 102 having a locking pin 104 extending therefrom. The thumb grip 102 is two-sided, permitting operation of the latch 100 regardless of which face of the intermediate member faces the computer housing, and which is exposed for use.

In operation, the intermediate member 80 can be flipped (about the second pivot 86) so that either of its two faces abuts the top face 98 of the computer. The intermediate member can then be secured in this position by urging the thumb grips toward the outer edges of the computer, engaging the locking pins 104 in the slots 92. Depending on which

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face of the intermediate member is adjacent the computer, the cover pivot 82 will be positioned adjacent either the front or back of the computer. In the former position, the cover can be folded down to overlie the display. In the latter position, the cover can be folded flush against the back of the computer, out of the user's way.

Like the computer shown in FIG. 1, the computer of FIG. 9 includes provision for storing a stylus 106 in a bore 108 defined in the housing. However, the bore in FIG. 9 is disposed perpendicularly to the axis of the cover hinge, rather than parallel thereto.

From the foregoing, it will be recognized that computers according to the present invention provide a number of important advantages. Computers including display cover windows according to the present invention permit communication to, and in some cases from, the user without requiring the user to first open the display cover. Computers including alert acknowledgement provisions further facilitate user interaction, again without requiring that the display cover first be opened. Write-on computers incorporating double-pivot hinge covers according to the present invention provide the protection benefits of a display cover without the usually-attendant increase in computer "footprint." Hinges incorporating plastic that is injection molded onto steel wire can be kept within much tighter manufacturing tolerances than those employing exclusively plastic or exclusively steel parts.

Having described and illustrated the principles of our invention with reference to preferred embodiments, it should be apparent that the invention can be modified in arrangement and detail without departing from such principles. For example, while the invention has been illustrated with reference to a cover that is secured to the top of a computer housing, it will be recognized that the cover can alternatively be secured to a side of the housing instead. Such an arrangement advantageously serves a shading function in situations where light incident from the side of the display might otherwise create glare. Other adaptations of the cover of the present invention to shade the display will be apparent to those of ordinary skill in the art.

Similarly, while the invention has been illustrated with reference to a cover that can lie flat against the front or back of a computer by virtue of a double-pivot hinge, it will be recognized that similar benefits can be achieved by alternative arrangements. In one such arrangement, the side edges of the cover are adapted to slidably engage a pair of corresponding tracks formed in the front and back of the computer. By this arrangement, the cover can be slid from the front, exposing the display, and thereafter inserted into the tracks on the back, securing the cover out of the way.

In still further embodiments of the invention, it will be recognized that the window and/or alert acknowledgement features can be employed in a computer without a double-pivot hinge.

In view of the many possible embodiments to which the principles of our invention may be put, it should be recognized that the detailed embodiments are illustrative only and should not be taken as limiting the scope of our invention. Rather, we claim as our invention all such embodiments as may come within the scope and spirit of the following claims and equivalents thereto.

We claim:

1. A computer comprising:

a housing;

an input/output screen mounted in the housing; and

a cover movable between first and second positions and secured in each position to the housing, in the first